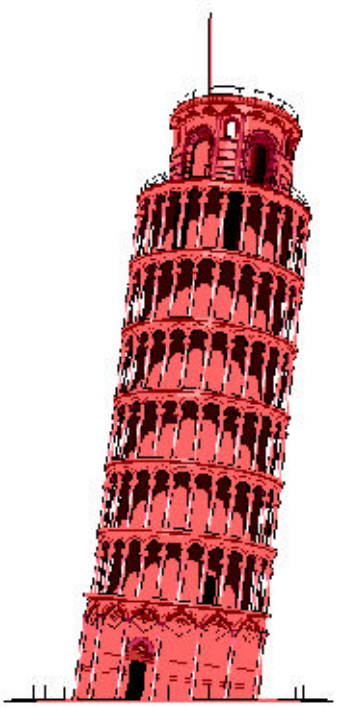
Gravity

Gravity is the attractive force between all objects in the universe. It is the force that pulls objects to the earth.

Galileo, a famous Italian scientist who lived in the 1500's, was the first to discover the force of gravity. In his famous experiment he dropped two cannonballs, one 10 times the mass of the other, at exactly the same time from the Leaning Tower of Pisa. Which cannonball do you think hit first? Before you answer the question set up your own Galilean type experiment.



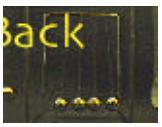
1. Find two round objects with different masses.
2. Stand on a chair and drop the two objects at exactly the same time from the same height.

Explanation: Both objects should hit the ground at the same time. Even though the two objects had different masses, gravity pulls each down to the ground at the same rate. Galileo discovered that gravity accelerates all objects at the same rate.

Try dropping a leaf and a rock at the same time from the same height. Which one do you think will hit the ground first? According to the above explanation, they should hit at the same time, but the rock hits first. Why? Both of these objects are still being accelerated by gravity at the same rate but, in this case, since the leaf has a small mass and a large surface area, air resistance is able to oppose the force of gravity and slow the leaf down.

Safety concerns:

Teachers and students, be sure to use safe operating procedure when dropping the objects to make sure that no one is in the path of the falling objects!



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